

Forest Management Guide for Cultural Heritage Values



Draft Forest Management Guide for Cultural Heritage Values -

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Preface/Executive Summary

This guide replaces the 1991 Guide: *Timber Management Guidelines for the Protection of Cultural Heritage Resources*. This new guide gives an overview of what cultural heritage values are and their importance to society. For the purpose of this guide cultural heritage values are typed into four classes: archaeological sites, archaeological high potential areas, cultural landscapes, and Aboriginal values. For each of these the Guide describes how to go about collecting them, data sensitivity issues to be aware of, roles in confirmation and verification of them, and operational prescriptions for them. Effectiveness monitoring is described in the final section. The appendices deal with items such as the model used by the Ministry of Natural Resources to determine archaeological high potential areas, integration of this guide into forest management planning, and example area of concern tables. This guide must be considered by forest managers when writing forest management plans and carrying out forest management operations. The Ministry of Culture, through the Ontario Heritage Act, has a role in archaeological sites and archaeological high potential sites. Their legislation and policies must also be followed.

Summary of Pilot Testing

Condition 38g of the *Declaration Order regarding MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* requires new guides to be pilot tested to assess their effectiveness and efficiency, where feasible and with the advice of the Provincial Forest Technical Committee. Pilot testing was done with the draft guide on three management units across the province. [pilot testing to occur fall 2005]

Summary of Social and Economic Impact Analysis

The Ministry of Natural Resources has committed that each new guide will have social and economic analysis done. For this guide it took place in 2005 where three management units. [Social and economic impact analysis to occur fall 2005]

Use of the Guide

This Guide must be used for forest management plans scheduled for approval starting in 2008. Plan amendments and contingency plans begun after the approval of this Guide must also use it. There are a number of best management practices in this guide dealing with data and compliance that are encouraged to be used upon Guide approval.

Statement of Environmental Values

This will be added once MNR's revised Statement of Environmental Values has been released based on *Our Sustainable Future*.

Summary of Standards and Guidelines

To understand the full context of the standards and guidelines the entire guide must be read. However the standards and guidelines are summarized here for quick reference. Standards are mandatory direction that must be met with little room for interpretation. Guidelines are also mandatory direction that the forest manager has flexibility based on the local situation and their knowledge. Best management practices are also found in the guide and forest managers are encouraged to adopt those that are pertinent to their area.

Prescriptions - General

Standard

Marking of the area of concern boundaries of confidential sites must not draw attention to the purpose for which the reserve is established.

Guidelines

In developing prescriptions, the planning team must be aware that a value may be in more than one class of values, such as an Aboriginal value that is also an archaeological site, or the archaeological component of a cultural landscape.

The prescription for the other value type must also be followed (e.g. if also an Aboriginal value then the appropriate participating communities must be invited to be involved in determining the appropriate prescription).

The viewscape surrounding the value may be an aspect of the value that also needs some type of protection. Integral to some cultural heritage values is the surrounding landscape, which gives further meaning to the value, e.g. spiritual site associated with a burial location.

Archaeological Sites

Standards

- protection of archaeological sites must be in the form of a reserve;
- the reserve must be at least 200m from the defined centre of the site (for point data), or at least 10 metres from the established boundary of the site area as delimited through archaeological assessment;
- sites identified as holding greater significance will require individual prescriptions and reserve limits that are based on specific site features; and
- within archaeological site reserves:
 - no harvest, renewal or tending activities;
 - no new roads, landings, water crossings or vehicle traffic.

Archaeological High Potential Areas

Standards

- the archaeological high potential area as mapped by the predictive model is the area of concern;
- if an archaeological high potential map is not available, the current version of the MCL “Checklist for Determining Archaeological Potential” will be used to identify high potential areas;
- prescriptions for archaeological high potential areas should consider:
 - regular operations where the proposed operations will not cause soil disturbance in excess of the levels described in the guidelines or approved trial results;
 - modified operations where the proposed operations may cause soil disturbance, but where this disturbance can be mitigated through specific restrictions on the operation; and
 - regular operations where archaeological assessment has given the go ahead for this.

- renewal and tending operations that require disturbance of the mineral soil are only allowed if a field trial has been completed and the results demonstrate that the resulting soil disturbance is at an acceptable level to MCL;
- when an archaeological assessment is required, that part of the high potential archaeological area where mineral soil disturbance may occur is the area that will be assessed;
- all new primary and branch roads, landings and water crossings identified in archaeological high potential areas require an archaeological assessment prior to construction; and
- salvage operations are allowed in areas of recent natural disturbance.

Guidelines

Harvesting

Regular operations may be proposed for the following without additional requirements:

- winter harvest on frozen ground (frozen to >20cm); and
- summer harvest in areas where the total area of soil disturbance is anticipated to be less than 5% of the treatment area within the area of concern.

Skid Trails

When soil disturbance along the skid trail is approaching 5%, a new route for the trail must be established. Overall, the total area used for skid trails within the AOC should be at or below 20% of the total AOC area.

Renewal and Tending

Where these operations can be designed to limit the attendant soil disturbance to natural levels they may be considered for archaeological high potential areas.

Mechanical site preparation which relies on mechanical disturbance (mixing, excavation) of the mineral soil may be proposed; however, this must be preceded by a Stage 2 archaeological assessment completed in advance of the operation.

Roads, Landings, Water Crossings and Aggregates

Where an operational road can be designed to limit or reduce soil disturbance to acceptable levels, and archaeological assessment will not be required.

All aggregate permit areas proposed within archaeological high potential areas will require prior completion of an MCL Stage 2 archaeological assessment.

Cultural Landscape Point Features

Standards

- protection of known values must be in the form of a reserve;
- if there is a known boundary then the reserve dimensions must be a minimum of 10 metres from the established boundary of the value;
- sites identified as holding greater significance (see Section 4) will require individual prescriptions and reserve limits that are based on specific site features;
- within these cultural landscape reserves:
 - no harvest, renewal or tending activities; and
 - no new roads, landings, water crossings or other vehicle traffic.

Cultural Landscapes – Landscape Level Features

Standards

- for cultural landscape polygon values, the mapped area is the area of concern and must be protected from adverse impact during the implementation of operations;
- for linear cultural landscape values (e.g. portage trail), prescriptions must provide protection for the value plus an appropriate buffer to protect the context of the cultural feature;
- new roads within cultural landscape polygon values must conform to the general patterns of the feature to protect the integrity of the landscape level pattern of the value (e.g. not cross old fences separating previous fields). When an existing alignment is used as a base for new road construction, documentation of any existing bridges, or visible evidence or earlier structures (cribs, dams, foundations, etc.) should be documented; and
- when roads are proposed to cross linear features associated with a linear cultural landscape value, the crossing should be done at an appropriate location, at a right angle and with the area of disturbance resulting from the intersection of the road and value minimized.

Guidelines

When modified operations are proposed, they should be laid out such that the landscape expression of the value is protected and that known point specific locations within the larger landscape are protected through appropriate prescriptions.

Harvesting

When the key defining elements of the value are visible on the ground or in aerial photography, this information can support planning strategies and prescribed approaches to protection.

An appropriate area around these values must be reserved from operations.

Renewal and Tending

Site preparation must be avoided in areas known to contain structural remains or which overlap archaeological high potential areas.

Aggregates

All aggregate permit areas proposed within cultural landscape areas will require prior completion of an MCL Stage 2 archaeological assessment or comparable study.

Aboriginal Values

Standards

- Aboriginal values will require prescriptions. Reserve dimensions and/or other restrictions on operations to mitigate adverse impact resulting from operations must be prescribed if:
 - there is agreement of the individual or group who provided the information and the planning team; and
 - the process followed in achieving this agreement is documented in either the supplementary documentation to the prescription, or in the amendment to the FMP prepared to record this process.
- the planning team will work with the individual or group providing the information to determine the protection appropriate for that value;
- prior to operations taking place, the individual or group who provided the values information will be requested to assist in marking or verifying the reserve boundaries, to ensure that the boundaries are accurate;
- consensus between the planning team and the Aboriginal group is the preferred method for deciding on the appropriate measures in the area of concern. If there is no agreement or appropriate participating communities then the planning team will look at similar values on the unit or at adjacent units where discussions have occurred and use similar protection levels; and

- all values provided by Aboriginal communities must be identified as such in the database to ensure they are not mistakenly removed without discussion with the community (e.g. historical canoe routes).

Guidelines

- for values that have been identified, but which cannot be verified in the field, additional information must be requested from the individual or group who provided the information on the location and characteristics of the value;
- completion of an archaeological assessment does not remove existing Aboriginal concerns or values for a location. Qualified individuals (e.g. elder or community representative) from the participating community must be invited to discuss these known values; and
- review of prescriptions and archaeological fieldwork proposals may be reviewed by Aboriginal groups, but this review cannot replace MCL requirements.

Harvest and Renewal

Operations must be preceded by a field study or site visit by members of the planning team and other qualified individuals as appropriate when the values identified may contain: structural remains, archaeological sites, cemeteries or burial sites.

Roads, Landings and Water Crossings

Primary, branch and operations roads and water crossings proposed for areas within or adjacent to areas identified as Aboriginal values should be reviewed by the participating Aboriginal group to ensure that construction and use will not result in adverse impact to the values present. Where a road is proposed to cross an area identified as an Aboriginal value, the appropriate Aboriginal community must be contacted to discuss the location of the crossing and necessary mitigation.

Changes in the accessibility of the value must be addressed in planning.

Treatment of Human Remains and Burial Sites

Standards

- Should human remains be identified during operations, all work in the vicinity of the discovery will be suspended immediately. All staff must be directed to avoid entering into the area where the remains were discovered, or altering the area in any way.
- Where the discovery is not of human remains, but materials, structures or features commonly associated with burials (grave markers or fences, mounds, coffin

hardware), all work in the vicinity of the discovery will also be suspended immediately.

1.0 CULTURAL HERITAGE VALUES

1.1 Legislative Framework

Forest management on Crown land is the responsibility of the Minister of Natural Resources through the *Crown Forest Sustainability Act* (CFSA). The *Declaration Order Regarding the Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario* was signed in 2003. Both of these influence forest management on Crown land. The CFSA provides for the sustainability of Crown forests and in accordance with that objective to manage Crown forest to meet social, economic, environmental and cultural heritage needs of present and future generations.

Under the CFSA there are four manuals, which further explain how forest management is to take place. The first is the *Forest Management Planning Manual* (FMPM) 2004 which outlines the process and the format that must be followed in order for a forest management plan to be prepared and approved. These plans are prepared every ten years for each forest management unit.

The second, the *Forest Operations and Silviculture Manual* (1995) requires that this guide - *Forest Management Guide for the Protection of Cultural Heritage Values*, be considered during the preparation and implementation of forest management plans. The third, the *Forest Information Manual* (2001) (FIM) (currently under revision), prescribes the mandatory information and information products required by the Minister and forest industry. The key FIM sections regarding this guide reference identification, confirmation and verification of values and using a predictive model to identify archaeological high potential areas.

The *Ontario Heritage Act* (OHA) is administered by the Ministry of Culture (MCL). The legislation provides for the protection of properties of archaeological or historical significance. Part VI of the Act speaks to the conservation of resources of archaeological value and specific requirements to ensure this protection is detailed in the Act and Regulations. Under the Act, an archaeological site must not be altered unless the work is conducted under the terms of a valid archaeological licence issued by the Minister. As permitted by Part VI of the Act, standard terms and conditions are attached to all licenses issued. Among these conditions is a requirement that all field work conforms to MCL guidelines and that a detailed report of all fieldwork undertaken is submitted to MCL for review. Regulations to the Act and terms and conditions of licensing also direct licence-holders in matters such as the registration of archaeological sites, recommendations for protection and mitigation of impacts to archaeological sites in development contexts and duration of archaeological collections made under licence.

The content of this guide is based on the experience with the former guide released in 1991 and work by the revision team during the writing of the guide. This guide was primarily written for planning teams to use when writing forest management plans.

However others who are involved in the protection of culture heritage values may also be interested in it: Aboriginal community members, Ministry of Culture staff, Ministry of Natural Resources planning staff.

1.2 Cultural Heritage Values Defined

The *Environmental Assessment Act* defines the environment to include, among other things, the cultural conditions that influence the life of humans or a community; any building, structure, machine or other device produced by humans; and any interrelationships that may exist between them. The Act also has as its principle objective, the betterment of the people of Ontario by providing for the protection, conservation and wise management of the environment.

Cultural heritage is defined in relation to the community which derives some sense of its identity from a shared history of beliefs, behaviours or practices. The communities defined may be broad, such as *the people of Ontario* or *members of Grand Council Treaty #3* or even more specifically, such as *farm pioneers of Jones County*. Many communities that express an interest in a cultural heritage are actively engaged in practices that are derived from the shared history, and the actions of individual members of the community derive their sense of belonging through this practice. However, while a cultural heritage may be based on activities or beliefs of their forbearers, it is not necessary that they continue to practice these traditions actively. We find that many practices continue only in a ritualised form. One example of this would be an agricultural society which expresses a strong interest in preserving the cultural heritage of farming in a region, but whose members are largely engaged in non-agricultural professions, where the group preserves its identity through an annual “fall fair” or similar event.

From this we can develop the following definition of cultural heritage: cultural heritage is the memory, tradition and evidence for the historical occupation and use of a place, and the consideration of this evidence in contemporary society in developing group identities.

This Guide attempts to address the heritage interests of diverse cultural groups. Their history of creating or using a landscape, physical features or structures that, through time, are important in the traditions, beliefs or institutions of the group. Values described for each of these “heritages” are described as separate classes of values and subdivided into categories. All cultural heritage values are protected under the terms of this Guide from adverse impact, in order that current and future members of the groups or students of heritage may learn from or reflect upon them.

1.2.1 Cultural Heritage Resources: Fragile, Non-renewable and Rare

Cultural heritage values are unique to the people who created them and the time they were created, so they are non-renewable. For example, hunting activity may be reflected in the archaeological record by the remains of weapons and processed animal remains; however, the act of hunting may have included a spiritual or religious component, such as supplication to a deity for success and offerings and thanks given. Similarly, abandoned industrial sites may hold significance for the individuals who occupied them or their families or descendants. These are fragile, intangible components that may not be recognized by others.

Most cultural heritage sites have experienced some level of deterioration from the time of formation or abandonment. In the case of archaeological sites, cultural context may have become obscured through time and much of the physical context also deteriorated; nevertheless, the spatial relationships of materials on the site can provide considerable information on both cultural and physical context. It is critical that cultural materials (objects, artifacts, features and sites) be viewed and valued in context, both at the site and landscape scale.

1.2.2 Visibility of Values

An important consideration in planning for cultural heritage values protection is the concept of *visibility*. The visibility of a value is related to how readily an individual could identify traces of the past occupation or activity undertaken at the site. For most archaeological sites, visibility increases with the abundance of material. Visibility, in terms of the number of objects present, may stand as a measure of archaeological significance, but for many Aboriginal values, significant cultural activities may have left limited physical traces. Visibility can also be described in terms of how well it can be seen under normal conditions. As an example, buried archaeological sites are not usually visible, while the visibility of abandoned mine headframes is high. For most values, visibility is affected by season of observation, vegetation cover and similar factors.

1.3 Classes of Cultural Heritage Values

Four classes of cultural heritage values are defined for the purpose of this Guide. The four classes are:

- archaeological sites;
- archaeological high potential areas;
- cultural landscapes; and
- Aboriginal values.

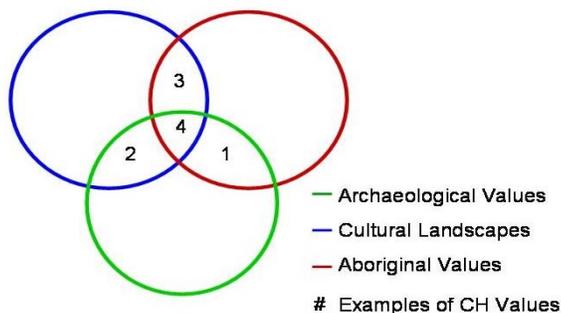


Figure 1: Cultural Values Relations

Figure 1 illustrates how individual values may be described as belonging to more than one class. The overlap of values between classes is an important consideration in determining consultation requirements and developing prescriptions for protection.

Four examples of cultural heritage values are placed within the Venn diagram to illustrate how specific sites may occupy a position within more than one values class. Example 1, is both a cultural landscape, such as an early farm community, and associated archaeological sites containing the remains of farm structures. Example 2, a pictograph site may be identified as an Aboriginal value, as well as being registered as an archaeological site. Example 3, a significant spiritual location identified as an Aboriginal value, which also appears in a noted work of art, and therefore is a cultural landscape. Example 4, an early route for a road (cultural landscape) may follow a traditional travel route (Aboriginal value) and be associated with a number of archaeological sites.

1.3.1 Archaeological Sites



Figure 2: Archaeological sites generally have artifacts found only in the soil.

Regulations to the *Ontario Heritage Act* define archaeological sites as:

any property that contains an artifact or any other physical evidence of past human use or activity that is of cultural heritage value or interest.

Sites are therefore defined on the basis of the presence of physical traces of past occupation. Specifically, artifacts are defined in the regulations as:

any object, material or substance that is made, modified, used, deposited or affected by human action and is of cultural heritage value or interest.

Archaeological sites that have been reported and described in sufficient detail to meet data requirements of FIM are considered to be known sites for the purpose of planning.

Most sites will be presented as points in the available data; however, in some instances, the site may be better described as a polygon.

1.3.2 Archaeological High Potential Areas

Archaeological high potential areas are determined through the use of an archaeological predictive modelling process approved by MCL. Archaeological predictive models identify areas that might contain archaeological sites based on the presence of specific landscape features that resemble the location and site conditions of known sites on the management unit. (MU)

Archaeological high potential areas that meet the data requirements of the *Forest Information Manual* (2001) are treated as known values in forest management planning.

1.3.3 Cultural Landscapes



Figure 3: Cultural landscape features are generally found above ground such as this marine railway near Chapleau, Ontario.

Cultural landscapes include larger scale landscape features and structural remains and are geographical areas that reflect past human interaction with the environment. There are three main categories of cultural landscapes.

1. Designed landscapes are the result of planned human action and include town sites, mine sites, dams and logging chutes.
2. Evolved landscapes arising from traditional use and occupation, such as the gradual development of a farm landscape, or habitations that develop along railways or roads.
3. Associate landscapes are commonly understood as the landscape setting of some specific cultural feature or notable event, such as the use of the location by a notable person, or featured in a well regarded work of art.

Structural remains are usually visible above the ground surface, or can be identified from local terrain or vegetation patterns. Buildings, partial walls or chimneys, stone piles, mining headframes and wrecks all qualify as structural remains and are values requiring protection. In many cases, depressions, mounds and other local landscape patterns signify the presence of cellars, building foundations or other structures not visible on the surface.

Cultural landscapes that are described in sufficient detail to meet the data requirements of FIM are considered known values for the purpose of forest management planning. Cultural landscapes generally include structural remains, and it is important to recognize that although structures may be recorded as point data, many cultural landscapes are polygons that should include the spaces around or between structures and perhaps elements of the surrounding landscape. It should be noted that many cultural landscape values are nested, representing a range of related cultural activities operating at different scales and requiring different levels or types of protection. For example, at a farm site, including individual buildings, the farmstead and the pattern of land use defined by the clearing and cultivation of fields, protection might include reserves at the location of the structural remains and modified operations based in operation layout within the field areas. For this reason, protection areas for cultural landscape polygon values should be based on a sound understanding of the key characteristics of the value. Many larger landscape level features can be protected simply by planning operations to ensure that the pattern created by the past use of the land is preserved and avoiding areas where structural or unique landscape features are present.

There are few formally defined cultural landscapes or existing databases. Cultural landscapes can include a local concentration of heritage values showing an affinity for a specific landscape feature. They can also include trade or travel routes, trails, portages, roads and railways notable for historical or cultural associations. Ceremonial or spiritual sites may also be cultural landscapes, especially where the significance of the cultural practice is based on location or setting. Local knowledgeable persons can provide

considerable support in the identification of some cultural landscape values and approaches to their protection.

1.3.4 Aboriginal Values



Figure 4: Aboriginal values sites not only include those where artifacts but also traditional spiritual and ritual areas.

The Forest Management Planning Manual (FMPM) outlines the process planning teams use to identify Aboriginal values. The planning team and other involved MNR staff will work in collaboration with participating Aboriginal communities to ensure that the objectives, scope, methodology and end use for data collected are agreed upon and documented. Methods used in gathering and collecting data should be sensitive to the Aboriginal community's input. In many cases, Aboriginal communities do not have the available human or financial resources to identify and manage the values data collection. It is also vital that the planning team recognize the importance of working with communities to obtain the best possible data from the correct source.

The Aboriginal Background Information Report, as required by the FMPM, includes an Aboriginal values map which identifies values of importance to the participating community including sites of local archaeological, historical, religious and cultural heritage significance, including Aboriginal cemeteries, spiritual sites and burial sites.

Values which have a geographic component and which can be primarily described as holding cultural heritage significance to the Aboriginal community will be considered in planning under the terms of this Guide, regardless of whether there are physical remains. Non-spatial values, economic and social interests and concerns which may be described as Aboriginal and Treaty Rights may be considered in forest management planning, but are outside of the scope of this Guide. Nevertheless, it is important that the planning team recognize from the outset that the range of Aboriginal values and interests for a plan area can be diverse and interconnected. When these values are outside of the scope of protection described in this Guide or FMP it is important that existing mechanisms and program responsibility within MNR should be identified to the participating Aboriginal community as soon as possible to address them.

Aboriginal values might be point, linear or polygon values. At times, it will be unavoidable that Aboriginal values will be described in general terms at the start of planning, with the understanding that additional detail about the values will be provided at the annual work schedule stage. The Aboriginal language used in describing the value may convey a level of subtlety or cultural meaning that is absent in an English translation of the terms used.

While the actual strategy for values identification must be established with each of the participating Aboriginal communities, the following strategies may prove effective in the identification and protection of their values:

- work towards building long term and continuous relationships with the community; recognize that good relations will result in more comprehensive values data: this is of benefit to both the MNR and the Aboriginal community;
- recognize that shorter community visits to discuss a specific item will build better relationships and yield better information than one or two “road show” type community visits. Visits can be timed to coincide with community events;
- recognize that multiple requests for values information may be made to the participating communities. MNR should try to minimize their requests from varying program areas;
- develop a data loan or data-sharing agreement with the community. Establish protocols for ensuring the security of sensitive data;
- develop strategies to assist the community in responding to requests for values data to other government initiatives;
- understand that few communities have the capacity to provide “plan-ready” data, so have a strategy in place to deal with this issue. Planning teams should recognize that as with all values, Aboriginal values may be identified at any time;
- provide advance notice of your planning schedule and interest in Aboriginal values. Propose a timeframe for discussion;
- historical forestry issues and other issues beyond the scope of the FMP might be brought into the discussion. Discuss with the community whether it is appropriate to gather values at the community, family and/or individual level(s). Often traditional land use within a traditional territory follows clan or family lines; therefore, the local knowledge for many areas might be found within families.
- ensure that skilled interpreters are involved in data collection to ensure that the values presented in the Aboriginal language are not lost in translation.
- values, interests and rights are inseparable to many Aboriginal communities. Ensure that issues outside of the scope of forest management are referred to the appropriate forum for discussion;
- ask the community for proposed protection measures for individual values or classes of values as part of values collection;

- levels and approaches to values protection proposed for particular classes of cultural heritage values should be developed in cooperation with the participating Aboriginal group or individual reporting the value;
- field examinations to locate values and establish Aboriginal values site boundaries should be conducted by a person designated by the community (e.g. elder, person reporting value). The group reporting the value may designate an individual having special qualifications relative to Aboriginal spiritual or cultural practice for this purpose; and
- remain aware that point values often represent one set of cultural activities nested within a larger area representing a related set of cultural activities. For example, the area surrounding a ceremonial site that is described as supporting the ceremonial action, should be considered as part of the value.

1.4 Effect on Cultural Heritage Values by Forest Management Activities

Adverse Effects

Forest management activities hold the potential to cause a range of adverse impacts to cultural heritage values. Many of these impacts are considered to be long-term, permanent and irreparable.

- physical impact to values, including:
 - damage or destruction of physical or material features;
 - loss of context information;
 - changes to physical environment, accelerating natural rates of deterioration; and
 - loss of plant, animal or forest cover associated with spiritual or ceremonial location;
- social impacts, including:
 - interference with spiritual or ceremonial activities; and
 - increased access to sites for artifact collecting, inappropriate use.

Beneficial Effects

Adverse effects can be prevented, minimized and/or mitigated through careful consideration of cultural heritage values in the planning and implementation of forest management activities. This in turn can create benefits.

Forest Industry benefits:

- improved protection of cultural heritage values in forest management; and
- achieve goals set by various certification programs.

Aboriginal benefits:

- improved opportunity for Aboriginal groups to participate in planning;
- development of Aboriginal values maps and databases; and
- improved relationships between planning team and local Aboriginal communities and individuals.

Public benefits:

- improved communication among forest users;
- increased awareness of local and regional cultural heritage;
- planning and verifications studies add to local and regional heritage data; and
- increased understanding of forest management planning and operations.

2.0 CULTURAL HERITAGE VALUES DATA

Cultural heritage planning begins with the development of comprehensive planning datasets. Recognizing that few complete datasets currently exist, developing the necessary datasets will be an ongoing task. It is expected that the quantity and quality of cultural heritage values data will increase over time. This will result in better information for each successive forest management plan.

In planning, four main classes of data are required: Aboriginal values, cultural landscapes, archaeological sites and archaeological high potential areas. As data for each of these classes is compiled, it is necessary to review it for completeness and accuracy, identifying gaps in the available data, noting specific issues surrounding data sensitivity or the significance of specific values and providing the appropriate data to the planning teams for incorporation into the FMP. Since some of this data is provided to the planning teams by agencies other than MNR, it is important that data requirements and FMP timelines are communicated to the providing agencies at the start of planning.

The terms confirm, verify, and mitigate have specific meaning within this Guide. The terms *confirm* and *verify* represent separate actions required in reviewing values data and distinguish the roles and responsibilities of the MNR and SFL holders (plan holders). Mitigation refers to measures to lessen or reduce adverse impact to a value.

Appendix II should be referred to to find out when data is collected and assessed during the forest management planning process.

2.1 Data Sources

Sources for data to build a comprehensive cultural heritage values planning inventory are diverse; however, MNR is not the principle custodian for much of this data. Archaeological site records are maintained by MCL and Aboriginal values reside with the community or individuals. Some data can be gathered from primary and secondary historical sources as part of the assembly of background information by MNR, although developing comprehensive data in this way represents a long term project. In developing a cultural heritage values planning inventory be aware of potential sources including the ones in Table 1.

Table 1: Some sources of cultural heritage values.

Ministry of Culture

- registered archaeological sites database;
- unverified site files; and
- reports of regional inventory surveys, excavations or collections.

Ministry of Natural Resources/ SFL Holders

- archaeological high potential mapping;
- FMP related archaeological or heritage assessment reports (verification, mitigation);
- district Sensitive Area files, Crown Land Use Atlas and Reports on removal of unauthorized occupations;
- district Natural Resource Values Information System (NRVIS) cultural heritage information;
- Ontario Parks – park management plan background studies, park libraries or archives;
- information from district or area staff on unverified sites; and
- old forest inventory and topographic maps, and aerial photos.

Aboriginal Communities

- Aboriginal values mapping (e.g. Aboriginal Background Information Report);
- community consultations, individual or family interviews; and
- other primary or secondary historical documents.

Planning Team

- company records;
- information from Company Staff, LCC on unverified sites;
- FRI maps; and
- SFL holder records, known info.

Other Data as Available

- primary and secondary historical sources (books, journals, maps, atlases);
- Ontario Bureau of Mines Reports, MNDM closed/abandoned mines database; and
- community museum societies, historical societies, Women's Institutes, etc.

2.1.1 Ministry of Culture Archaeological Data

MCL maintains a database of registered and unverified archaeological sites that is to be provided to the MNR cultural heritage specialist prior to the start of planning in support of archaeological high potential modelling. Secondary sources of archaeological site data may be found in published and manuscript archaeological reports, Ontario Parks files, local knowledge and local histories.

2.1.2 Aboriginal Data

Aboriginal Background Information Reports include a values map describing past land use by the community which is the key source of Aboriginal values data pertinent to this guide. Aboriginal data is provided on a voluntary basis, but when it is provided it must be considered in the planning process. The MNR planning team member assigned the role of contact with Aboriginal communities will be the primary contact for this data. Although Aboriginal data can be submitted in at any time, it is encouraged during the early part of the planning process. MNR needs to work with Aboriginal communities to improve data.

2.1.3 Cultural Landscapes Data

Collecting information in order to develop a cultural landscapes planning inventory is beneficial for the protection of these values. This information is typically available from secondary historical sources in books, journals, atlases and maps. Local information will also be useful in compiling this data. Local Citizens Committee members may have affiliations with community museums, historical societies or other groups holding documents pertaining to the history of communities. Individuals with a good working knowledge of the land may be aware of locales of potential interest in cultural heritage data compilation and planning.

Cultural landscapes datasets should be developed. MNR's *A Topical Organization of Ontario History* (1972) is a good example of this. Cultural landscapes data will be integrated into the archaeological high potential modelling, as appropriate.

2.1.4 Archaeological High Potential Data

The archaeological high potential data to be used in planning is prepared by the MNR cultural heritage specialist and provided to the planning team. The archaeological high potential maps are developed using a variety of geospatial map layers as base data for modelling and includes consideration of both the MCL registered site information and the available cultural landscapes data as the basis for calibrating the model. The methodology MNR currently uses in developing the archaeological high potential maps is described in greater detail in Appendix I.

2.2 Sensitive Information

All cultural heritage information used in forest management planning should be reviewed by the planning team to determine whether the information is to be classified as sensitive data. The MNR is responsible to ensure that sensitive data is protected, secure and managed in accordance with the Ministry of Natural Resources *Policy for the Management of Classified Data in the Ontario Land Information Warehouse* (in prep). Sensitive data should only be made available for specific purposes to specific people on a “need to know” basis. The MNR should also determine if additional data loan/sharing agreements are needed to cover information provided from other sources such as an Aboriginal community.

Where MNR provides information about sensitive values on a need to know basis, the receiver of the information, whether a member of the planning team, a representative from the SFL holder or a licensee will be considered an “Agent of the Crown” and must maintain the confidentiality of the sensitive data.

2.2.1 Archaeological Sites

MCL is the custodian for all registered archaeological sites. The information must be classified as sensitive data.

Archaeological sites are not to be shown on the public versions of maps used for forest management purposes. Archaeological site areas of concern should be documented in the plan in such a manner to not disclose the value or the location of the site.

The MNR district staff person who has access to archaeological site data should review all proposed forest management activities during the preparation of the forest management plan and any amendments to it. If field staff are unable to locate a site in the field with the information available, the MNR district should be contacted for further direction.

2.2.2 Archaeological High Potential Areas

Archaeological high potential areas are not considered sensitive information even though unknown sensitive sites may be contained within their boundaries. Archaeological high potential areas are required to be shown on MNR values maps and on maps showing proposed management activities. Areas of concern for archaeological high potential values should be distinguished from overlapping protection areas through the use of a distinct symbology.

2.3 Data Standards

FIM identifies the standards that non-timber values data are required to meet in order to be considered known values for the purposes of forest management planning. For a value to be considered a known value, sufficient information must be available to describe its geographic location and basic features. Data which do not meet the standards of FIM are not considered as known values for the purpose of planning; therefore, these values may be considered at the discretion of the planning team. The basic description information required for known values includes: identification of the value by class or category (sub-class), information source, positional accuracy, description of the physical characteristics of the site and any other specific information required to provide appropriate protection.

Currently FIM describes the desired positional accuracy for point, line and polygon values as 10 metres but the standard for positional accuracy is 100 metres. Values that are mapped with positional accuracy greater than 100 metres should be subject to additional review to ensure that the value can be mapped in sufficient detail to allow operational prescriptions to be developed for their protection. In transferring values data to the planning team, MNR should indicate the positional accuracy of the values data; where this information is not known, the values will normally not be treated as known values with a corresponding reduction in the protection approved under the FMP.

In cases where provision of the basic description may be in violation of a negotiated agreement for values provided to the planning team, the corresponding prescription for the value must include a description of the process by which this information or an appropriate protection area around the value can be obtained from the provider.

2.4 Confirm

The term confirm describes the roles and responsibilities of the data provider. The provider of values information must confirm that information collected and provided is accurate and meets the standards described in FIM. MNR is responsible for confirming the presence of non-timber values and ensuring that information is collected.

In confirming archaeological high potential values, additional information has been considered in ensuring that the underlying data and assumptions made in predictive modeling were met and that the areas described as holding a high potential for the presence of additional values are appropriately defined.

Where the data provided by MNR is from another agency, that agency is responsible for confirming and documenting that the data provided meets FIM data standards and is sufficient for planning. The most effective method for confirming the values is through additional discussion and review of detailed mapping of the value and AOC with the

provider. Confirmation of Aboriginal values is not necessary if the values are accepted as provided.

MNR is responsible for confirming archaeological high potential maps and any cultural landscapes data provided to the planning team. Confirming archaeological high potential includes further analysis to ensure that modelling output conforms to the base landscape data and assumptions of the model calibration. Additional information, detailed mapping, photography and descriptions provided by field staff familiar with the area, can assist in identifying areas that do not conform to the definition of potential. Confirmation does not determine the presence or absence of archaeological site locations within the high potential area since this is the role of the field investigations undertaken in verification.

See Appendix I for detailed information on the confirmation of high potential modelling results.

2.5 Verify

Verify describes the roles and responsibilities of the receiver (i.e. for this Guide, the SFL holder) once they receive the final confirmed archaeological high potential map. The receiver must verify that the information received is accurate, meets the standards of FIM and is sufficient to develop AOC prescriptions and protect those values. As the receiver, SFL holders are responsible for verifying the presence of known non-timber values and verifying information about the values provided by the MNR. Verification of non-timber values information expected to be affected by planned forest operations must be done prior to conducting those operations. License holders are responsible for providing corrections to information about known non-timber values that they encounter during the implementation of forest management operations. Verification studies are not required if SFL holders accept data as provided by the MNR and the appropriate AOC prescriptions are applied.

At times, the location of a mapped cultural heritage value cannot be verified in the field. When this occurs, it is the responsibility of the data provider to review the source data and work with the SFL to determine appropriate prescriptions. When field work suggests that a registered archaeological site value is not mapped with sufficient accuracy to allow verification, the area that would have been the archaeological site area of concern will have the archaeological high potential area prescription applied instead. If the other types of values cannot be located because of insufficient positional accuracy in mapping regular operations, with a provision to stop operations, should the value become evident can be prescribed. If the physical characteristics of the landscape contradict the possibility for a value to exist in the mapped location, regular operations can be prescribed and the value removed from the values map. When this is proposed, it will be necessary to review the specific conditions of the verification with the MNR cultural heritage specialist, Aboriginal representative on the planning team

and/or MCL regional archaeologist, as appropriate for the value. For example, if a trail has been identified as a value, but verification reveals that the route described ends at a cliff face, and that there is no other local route which could have been used the value may be removed from the values map.

Verification studies for archaeological sites and archaeological high potential areas must be completed as an MCL Stage 2 archaeological assessment. Cultural landscape values verification studies may be completed as archaeological assessments; however, certain categories of values will require other specializations (e.g. structural remains, historic landscapes, bridges and spiritual or ceremonial areas).

Verification studies of Aboriginal values are usually conducted as discussions with the participating community and the active participation of community members who are familiar with the basis for the identification of the value. Site verification should be conducted by qualified individuals: typically Elders and community members. Verification may be directed towards documentation of boundaries or the core areas of the value, evaluating the significance and sensitivity of the value, and appropriate protection. In many cases, the individual who provided the information will be the most qualified individual to conduct the site verification.

2.6 Mitigation

Mitigation refers to long term protection strategies for a particular site to ensure that cultural heritage values suffer no adverse impacts as a result of forest operations (e.g. avoidance or excavation). Archaeological mitigation, in the form of an MCL Stage 4 excavation is required when conflicts between proposed operations and values cannot be resolved. In determining a preferred alternative (i.e. excavation or avoidance) the SFL should consider such factors as the nature of the operations proposed for the AOC, the significance of the heritage value present, protection afforded by a reserve, potential water crossings and the value of the fibre available relative to the cost of the required archaeological salvage excavation.

3.0 PROTECTION STRATEGIES

Developing effective approaches to cultural heritage values protection depends on the completeness and accuracy of the values inventory for the forest and the planning team's understanding of the protection requirements for the classes of cultural heritage values identified. The principal focus of most cultural heritage prescriptions should be on avoiding or minimizing physical damage to values through planning of reserves or modified operations. Indirect impacts, such as changes in visibility or accessibility of values as a result of operations must also be considered in the planning of prescriptions. Operator awareness and skill is critical to successful cultural heritage values protection.

The objective of the direction provided in this Guide is the protection of cultural heritage values from adverse impact and does not describe additional inputs that would be required to improve the existing condition of the value.

This Guide provides standards and guidelines to protect cultural heritage values from adverse impact. In planning, prescriptions may be prepared for individual AOCs, or groups of AOCs with common values. It may be possible to group cultural heritage AOCs on the basis of a common prescription, rather than a definition of cultural similarities.

In developing appropriate protection strategies, the anticipated impact resulting from operations must be considered in terms of whether these impacts are adverse or beneficial to the values. Selected protection strategies must avoid or mitigate adverse impacts.

For the purpose of this guide a qualified individual is dependent on the type of value. For those values that Ministry of Culture has control (i.e. archaeological sites and archaeological high potential areas) a qualified individual is a licensed archaeologist through the Ontario Heritage Act. For cultural landscape values a qualified individual may be a person who has knowledge and experience with specific ones. A qualified individual for Aboriginal values may be an elder or another individual who the community identifies as the person best provide information and guidance on their values.

While additional inventory and research projects beyond the required studies will improve the knowledge base for the FMU and lead to an overall improvement in planning and protection, this Guide does not require MNR or SFLs to undertake archaeological inventory surveys, excavations or conservation projects beyond those required by appropriate prescriptions within an FMP.

See Appendix III for example FMP-14 tables.

Standards and guidelines are summarized at the front of this document. Throughout this section they have been bolded for ease of locating them. Below is a standard and some guidelines relevant to all four classes of cultural heritage sites.

Prescriptions - General

Standard

Marking of the area of concern boundaries of confidential sites must not draw attention to the purpose for which the reserve is established.

Guidelines

In developing prescriptions, the planning team must be aware that a value may be in more than one class of values, such as an Aboriginal value that is also an archaeological site, or the archaeological component of a cultural landscape.

The prescription for the other value type must also be followed (e.g. if also an Aboriginal value then the appropriate participating communities must be invited to be involved in determining the appropriate prescription).

The viewscape surrounding the value may be an aspect of the value that also needs some type of protection. Integral to some cultural heritage values is the surrounding landscape, which gives further meaning to the value, e.g. spiritual site associated with a burial location.

3.1 Archaeological Sites

Archaeological sites include both those registered with the Ministry of Culture and those the planning team knows of through other sources.

Standards

- **protection of archaeological sites must be in the form of a reserve;**
- **the reserve must be at least 200m from the defined centre of the site (for point data), or at least 10 metres from the established boundary of the site area as delimited through archaeological assessment;**
- **sites identified as holding greater significance will require individual prescriptions and reserve limits that are based on specific site features;**
- **within archaeological site reserves:**
 - **No harvest, renewal or tending activities; and**
 - **No new roads, landings, water crossings or vehicle traffic.**

Best Management Practice

- reserve dimensions should be increased when there is an identified risk:
 - of site disturbance resulting from windthrow of residual trees or
 - increased access to the site.

Exception to the standard

Regular operations may occur within an archaeological site if:

- the archaeological site is removed through the archaeological excavation and documentation of the site in a manner consistent with the standards described in *MCLs Standards and Guidelines for Archaeological Consultants* and review of the resulting report(s) has been completed by MCL; and
- an exception monitoring plan is prepared with input from a licensed archaeologist to ensure that materials or features not identified recovered or recorded in the archaeological excavation are protected from unauthorized collection, loss or damage. Monitoring should be conducted as close as possible to the time of disturbance, to allow for emergency removal and recording of any additional materials or features that may be discovered.

3.2 Archaeological High Potential Areas

Given that most archaeological sites are subsurface features lying within 30cm of the ground surface, this is the area that must be protected. Protection of archaeological high potential areas centres on the ability to minimize mineral soil disturbance while conducting the specified operations.

For the purpose of this Guide, soil disturbance includes mineral soil displacement through excavation, rutting, mixing or other mechanical interaction with silvicultural equipment. Mineral soil exposure, through the removal of the organic soil layer is not considered soil disturbance.

If forest operations not specified in the standards and guidelines below are proposed for an archaeological high potential area it is necessary for the planning team to carry out the necessary trials to document the anticipated disturbance. Ministry of Culture will provide more information on what the trial must entail (e.g. size, ground conditions, statistical soundness etc.) The MNR cultural heritage specialist and MCL regional archaeologist will review this information to ensure that the anticipated levels of soil disturbance are acceptable in these areas of concern.

Archaeological assessment is conducted under direction in the current MCL guidelines. Verification of archaeological high potential areas is in the form of a Stage 2

archaeological assessment. As a form of verification study, archaeological assessment is the responsibility of the SFL.

Assessment reports completed by a consultant engaged by an SFL must meet MCL reporting requirements. The information requirements described in Appendix IV may be compiled in part by the MNR or SFL and provided to the consultant. Since assessment reports represent work completed under the terms of an area of concern prescription for a current FMP, copies of the reports are required for internal MNR district and head office review. MCL has identified that assessment reports contain sensitive information about archaeological site values on Crown Land. A summary of archaeological assessment reports should be filed with the FMP, since the reports contains sensitive information. The reports are considered the intellectual property of the licensed archaeologist or report author.

Standards

- **the archaeological high potential area as mapped by the predictive model is the area of concern;**
- **if archaeological high potential mapping is not available, the current version of the MCL “Checklist for Determining Archaeological Potential” will be used to identify high potential areas;**
- **prescriptions for archaeological high potential areas should consider:**
 - **regular operations where the proposed operations will not cause soil disturbance in excess of the levels described in the guidelines or approved trial results;**
 - **modified operations where the proposed operations may cause soil disturbance, but where this disturbance can be mitigated through specific restrictions on the operation; and**
 - **regular operations where archaeological assessment has given the go ahead for this.**
- **renewal and tending operations that require disturbance of the mineral soil are only allowed if a field trial has been completed and the results demonstrate that the resulting soil disturbance is at an acceptable level to MCL;**
- **when an archaeological assessment is required, that part of the high potential archaeological area where mineral soil disturbance may occur is the area that will be assessed;**
- **all new primary and branch roads, landings and water crossings identified in archaeological high potential areas require an archaeological assessment prior to construction; and**
- **salvage operations are allowed in areas of recent natural disturbance.**

Note that for areas that have been subject to Stage 2 archaeological assessment, regular operations may be conducted where no archaeological site values are identified.

Where archaeological sites are identified in Stage 2 assessment, these sites must be treated as an archaeological site with an appropriate prescription.

Guidelines

Harvesting

Harvest with conventional systems results in varying levels of ground disturbance; however, it is expected that most operations in archaeological high potential areas can be conducted without causing mineral soil disturbance. Factors affecting disturbance include season of harvest, harvest system, layout of operation, soil strength/site type and operator skill.

Regular operations may be proposed for the following without additional requirements:

- **winter harvest on frozen ground (frozen to >20cm); and**
- **summer harvest in areas where the total area of soil disturbance is anticipated to be less than 5% of the treatment area within the area of concern.**

Skid Trails

Operation layout is extremely important to achieve the goal of minimizing soil disturbance. The prescription should identify the requirement to limit skid trails within the AOC and to ensure that skid trails avoid areas where mineral soil disturbance may result. These areas would include areas of weaker soil, steep slopes, sharp corners and low, wet areas. **When soil disturbance along the skid trail is approaching 5%, a new route for the trail must be established. Overall, the total area used for skid trails within the AOC should be at or below 20% of the total AOC area.**

Renewal and Tending

Renewal and tending cause variable levels of soil disturbance, although most seek to emulate natural disturbance levels required for effective regeneration of target species. Many renewal and tending operations increase mineral soil exposure for seeding and planting. **Where these operations can be designed to limit the attendant soil disturbance to natural levels they may be considered for archaeological high potential areas.**

Mechanical site preparation which relies on mechanical disturbance (mixing, excavation) of the mineral soil may be proposed; however, this must be preceded by a Stage 2 archaeological assessment completed in advance of the operation.

Roads, Landings, Water Crossings and Aggregates

Use and maintenance of existing roads does not represent new disturbance and does not require archeological assessment. Operational roads should be placed outside of archaeological high potential areas wherever possible. **Where an operational road can be designed to limit or reduce soil disturbance to acceptable levels, and archaeological assessment will not be required.** Operational roads which may meet the criteria of minimal soil disturbance include:

- winter roads and landings constructed over packed snow and when the ground is frozen (>20cm) and soil disturbance resulting from road construction in the AOC is under 5%;
- water crossings constructed using snow, ice or a temporary bridge which do not require additional grubbing, filling or ditching and only used while the ground is frozen (>20cm) and mineral soil disturbance in the AOC portion of the corridor will be under 5%. Minor revisions to the water course for culvert placement are allowed; and
- water crossings for operational roads constructed using temporary bridges only without in-ground footings. In winter, this provision applies only to roads with approaches constructed using packed snow on frozen ground (>20cm). For other seasons, this provision applies only to roads with approaches constructed using under 2 metres of fill, with this fill placed over geotextile, corduroy or brush mats with no grubbing or ditching.

Aggregate permits are issued under terms of the *Aggregates Resources Act*. All aggregate permit areas proposed within archaeological high potential areas will require prior completion of an MCL Stage 2 archaeological assessment.

Best Management Practice

- in salvage harvest, root mats should be kept in place (i.e. minimum displacement), in order to retain archaeological context;
- within archaeological high potential areas roads, landings, etc. should be planned in areas of non-productive forest, exposed bedrock and areas previously harvested and mechanically site prepared. Archaeological assessment requirements for these areas will normally be reduced when the prior disturbance is documented; and
- areas mapped as archaeological high potential, but which are found during operations not to meet the assumptions of the modelling (e.g. beaver ponds and steep slopes) may be identified for regular operations. These areas should be documented and tracked with the information provided to the cultural heritage specialist in support of future improvements to modelling.

Exception to the standard

- forest management activities may be undertaken within an archaeological high potential area of concern if:
 - an archaeological assessment and required mitigation, which meets the requirements of MCLs *Standards and Guidelines for Archaeological Consultants*, including review of the resulting report(s) has been completed by MCL and any newly identified cultural heritage sites are registered and appropriate reserves are established; and
- a monitoring plan is prepared with input from a licensed archaeologist to ensure that materials or features not identified recovered or recorded in the archaeological excavation are protected from unauthorized collection, loss or damage. Monitoring should be conducted as close as possible to the time of disturbance, to allow for emergency removal and recording of any additional materials or features that may be discovered.

3.3 Cultural Landscapes

For the purpose of this guide, cultural landscapes have been divided depending on whether they are point, linear or polygon features.

3.3.1 Cultural Landscape Point Features

Cultural landscape point features include values such as structural remains and wrecks. Structural remains include buildings, bridges, docks and dams, while wrecks include shipwrecks and older wrecked or abandoned vehicles and machines. Often, these values are found in a local context that includes a surrounding or associated linear or polygon feature that is also a cultural heritage value. For example, a group of buildings or wrecks may be treated collectively as a small polygon cultural landscape; farm buildings may be associated with field enclosures; and logging camps may be considered in association with streams modified for log drives.

Large artifacts such as mining equipment or abandoned vehicles (railway equipment, aircraft, boats, barges, early harvesting equipment, automobiles and trucks) are sometimes present. Removing them to an appropriate location must be done in conjunction with MCL.

Standards

- **protection of known values must be in the form of a reserve;**
- **if there is a known boundary then the reserve dimensions must be a minimum of 10 metres from the established boundary of the value;**

- **sites identified as holding greater significance (see Section 4) will require individual prescriptions and reserve limits that are based on specific site features;**
- **within these cultural landscape reserves:**
 - **no harvest, renewal or tending activities; and**
 - **no new roads, landings, water crossings or other vehicle traffic.**

Best Management Practice

- where the value has been identified to the planning team by an individual or group, they should be involved in developing an appropriate prescription;
- the prescription reserve dimensions should be increased when there is an identified risk of site disturbance resulting from increased visibility of and access to the site area as a result of operations;
- ask the individual or group who identified the value to be involved in helping to establish the value boundary; and
- residual trees within the reserve may be removed if the windfirmness of residual trees is considered low and windfall could result in damage to the cultural value.

Exception to the standard

Normal forest management activities may be undertaken within a Cultural Landscape point feature area of concern only up to the limits of any structural remains present, if:

- the value is fully documented in a manner that conforms to the appropriate professional standards by a qualified individual;
- an archaeological assessment and required mitigation, which meets the requirements of MCLs *Standards and Guidelines for Archaeological Consultants*, including review of the resulting report(s) has been completed by MCL for any values where associated archaeological high potential is indicated and any newly identified cultural heritage sites are registered and appropriate reserves are established; and
- an exception monitoring plan is prepared with input from a licensed archaeologist to ensure that materials or features not identified recovered or recorded in any archaeological excavation are protected from unauthorized collection, loss or damage. Monitoring should be conducted as close as possible to the time of disturbance, to allow for emergency removal and recording of any additional materials or features that may be discovered.

3.3.2 Cultural Landscapes – Landscape Level Features (polygon and linear features)

Cultural landscapes are defined on the basis of landscape level patterning, and it is this patterning that is to be protected in operations. For prescriptions to be effective, they must rely on additional detailed planning that supports decisions made regarding operation layout and scheduling, and provide flexibility in operations to allow for avoidance of cultural heritage point values that may be present. Generally, cultural landscape values can be protected through modified operations prescriptions, rather than specialist field studies.

Standards

- **for cultural landscape polygon values, the mapped area is the area of concern and must be protected from adverse impact during the implementation of operations;**
- **for linear cultural landscape values (e.g. portage trail), prescriptions must provide protection for the value plus an appropriate buffer to protect the context of the cultural feature;**
- **new roads within cultural landscape polygon values must conform to the general patterns of the feature to protect the integrity of the landscape level pattern of the value (e.g. not cross old fences separating previous fields). When an existing alignment is used as a base for new road construction, documentation of any existing bridges, or visible evidence or earlier structures (cribs, dams, foundations, etc.) should be documented; and**
- **when roads are proposed to cross linear features associated with a linear cultural landscape value, the crossing should be done at an appropriate location, at a right angle and with the area of disturbance resulting from the intersection of the road and value minimized.**

Guidelines

For some cultural landscape values modified operations may be appropriate to protect the principle components of the landscape. **When modified operations are proposed, they should be laid out such that the landscape expression of the value is protected and that known point specific locations within the larger landscape are protected through appropriate prescriptions.**

Harvesting

Harvest using conventional systems will not, in many cases, cause adverse impacts to the principle components of cultural landscape polygon values. Operations modified through additional effort in layout and operator awareness can help to achieve cultural

heritage protection objectives. Factors affecting the prescription for modified operations include:

- the scale of the cultural landscape features and their expression on the landscape;
- the extent of the feature relative to the proposed operation;
- operation layout; and
- operator skill and familiarity with the value and prescription.

When the key defining elements of the value are visible on the ground or in aerial photography, this information can support planning strategies and prescribed approaches to protection. If the planning team is not sure what the prescription should be then they should consult with MCL and other groups and individuals who may have more information.

Examples of recommended modified operations:

- operations that have been laid out to conform to the general pattern of the cultural landscape (i.e. operate within fence lines/ fields for former agricultural areas; maintain partial retention adjacent to linear features such as old roads and trails);
- where mature forest cover is integral to the definition of the value, extend return period for strip clearcuts to ensure adequate regeneration between operations. This would be the case for associate landscapes, where a scene at the location has been rendered in a work of art, or provided context for the actions of a well-known historical figure; and
- reserve core areas (i.e. farmsteads or trails) from harvest and prescribe diminished retention with increased distance or in zones away from this core.

An appropriate area around these values must be reserved from operations.

Where an area cannot be operated using recommended modified operations then this must be discussed with other interested parties (e.g. MCL).

Renewal and Tending

Normal renewal and tending activities may be prescribed for most cultural landscape value areas where harvest has occurred with any necessary modifications to ensure the protection of the principle components of the cultural landscape value.

Some renewal and tending activities can be used in support of cultural landscape protection, for example:

- natural regeneration of species from fence rows into former agricultural fields; and

- replanting species dominant during initial European settlement, to help restore the pre-settlement forest.

Site preparation must be avoided in areas known to contain structural remains or which overlap archaeological high potential areas.

Aggregates

Aggregate permits are issued under terms of the *Aggregates Resources Act*. **All aggregate permit areas proposed within cultural landscape areas will require prior completion of an MCL Stage 2 archaeological assessment or comparable study.**

Best Management Practices

- where the value has been identified to the planning team by an individual or group, they should be involved to develop appropriate prescriptions;
- when the location of the value cannot be confirmed in the field based on the information provided to the planning team, the data provider should be provided an opportunity to provide additional detail on the location and/or nature of the value or to assist in locating the value in the field. If this does not result in field location of the value, the value may be removed from the values map and/or regular operations prescriptions applied;
- for certain categories of cultural landscape values, it may be appropriate to engage a qualified individual to identify or evaluate the principle components of the value and determine the location and extent of any point values within the landscape requiring specific protection prescriptions; and
- if the cultural landscape site is not considered to be sensitive data then the area concern table (FMP 14) should have an attached map with a large scale diagram showing the components of the landscape and prescriptions for it.

3.4 Aboriginal Values

Representatives of participating Aboriginal communities will play a critical role in ensuring that important values or concerns for areas that are proposed for operations during the term of the plan are identified to the planning team. Ongoing discussions between the planning team and the participating communities will work towards developing appropriate prescriptions and ensuring that sensitive information is protected.

Aboriginal values may range from point specific to landscape level values, some of which may lack a material or physical component.

A combination of professional judgment and discussion with the Aboriginal community should be used to determine the protection required for Aboriginal values. Values protection may be achieved through seasonal restrictions on operations.

Often, larger landscape level features can be protected by planning operations that conserve the features or elements that are important in the cultural use of the landscape. For example the protection of a traditional travel route could be achieved by ensuring that water access and portages are maintained and partial harvest prescriptions adjacent to the route ensures forest cover and windfirmness of residual trees.

Point specific values may be protected through reserves, modified operations or a process of documentation and mitigation similar to that used for archaeological site values.

Protection areas and prescriptions should also be sensitive to the fact that many values are nested or have a high reliance on landscape context for their cultural meaning. For example, some areas of spiritual value may be positioned to take advantage of a viewscape, or the sound of a waterfall or rapid. The principle components inherent to the value will determine whether the prescription requires a reserve, seasonal restrictions on operations, road relocation, modified operations or other approach.

Standards

- **Aboriginal values will require prescriptions. Reserve dimensions and/or other restrictions on operations to mitigate adverse impact resulting from operations must be prescribed if:**
 - **there is agreement of the individual or group who provided the information and the planning team; and**
 - **the process followed in achieving this agreement is documented in either the supplementary documentation to the prescription, or in the amendment to the FMP prepared to record this process.**
- **the planning team will work with the individual or group providing the information to determine the protection appropriate for that value;**
- **prior to operations taking place, the individual or group who provided the values information will be requested to assist in marking or verifying the reserve boundaries, to ensure that the boundaries are accurate;**
- **consensus between the planning team and the Aboriginal group is the preferred method for deciding on the appropriate measures in the area of concern. If there are is no agreement or appropriate participating communities then the planning team will look at similar values on the unit or at adjacent units where discussions have occurred and use similar protection levels; and**

- **all values provided by Aboriginal communities must be identified as such in the database to ensure they are not mistakenly removed without discussion with the community (e.g. historical canoe routes).**

Guidelines

- **for values that have been identified, but which cannot be verified in the field, additional information must be requested from the individual or group who provided the information on the location and characteristics of the value.** This may include a request to participate in a field visit to assist in prescription layout. If the field visit fails to locate the value, then the value may be removed, or another prescription determined for the general location of the value through discussion with the participating Aboriginal group;
- **completion of an archaeological assessment does not remove existing Aboriginal concerns or values for a location. Qualified individuals (e.g. elder or community representative) from the participating community must be invited to discuss these known values; and**
- **review of prescriptions and archaeological fieldwork proposals may be reviewed by Aboriginal groups, but this review cannot replace MCL requirements.**

Harvest and Renewal

Examples of modified operations determined through discussion include:

- seasonal restrictions to reduce noise and traffic in a spiritual or ceremonial area;
- protection of viewsapes or adjacent forest cover for spiritual locations;
- extended return periods for strip clearcuts to ensure specific levels of mature cover; and
- prior notice and inspection of the layout by members of the participating community.

This list is not intended to be exhaustive.

Operations must be preceded by a field study or site visit by members of the planning team and other qualified individuals as appropriate when the values identified may contain: structural remains, archaeological sites, cemeteries or burial sites.

Roads, Landings and Water Crossings

Primary, branch and operations roads and water crossings proposed for areas within or adjacent to areas identified as Aboriginal values should be reviewed by the participating Aboriginal group to ensure that construction and use will not

result in adverse impact to the values present. Where a road is proposed to cross an area identified as an Aboriginal value, the appropriate Aboriginal community must be contacted to discuss the location of the crossing and necessary mitigation.

Changes in the accessibility of the value must be addressed in planning. For example, values based on a seasonal, spiritual or ceremonial use of an area, may require a prescription that limits activity during specific times of the year. Road decommissioning should also be reviewed with Aboriginal communities, since they may wish to continue some roads for access to specific values.

Best Management Practices

- protection areas should be determined in the field with the participation of a representative of the individual or group that reported the value;
- the planning team should ensure that all willing Aboriginal communities are provided an opportunity to assist in locating and laying out boundaries for identified values; and
- specific operational issues may need to be discussed, e.g. season of harvest, layout, site prep, tending, etc. for those areas where some harvest can be done.

3.5 Treatment of Human Remains and Burial Sites

As part of the background information collection, the cultural heritage specialist on the planning team should contact the Registrar, Cemeteries Regulation Unit, Ministry of Consumer and Business Services (CBS) to determine if any registered sites are located on Crown land within management unit. Human remains or burial sites identified to the planning team as values during the preparation of the plan should be reviewed with the Registrar, to ensure compliance with provisions of the *Cemeteries Act*. Protection of a site will be determined by the status of the registration. All burial sites identified should be reserved from operations or withdrawn from the eligible land base for forest operations.

Discovery of human remains is a potential result of forest operations. **Should human remains be identified during operations, all work in the vicinity of the discovery will be suspended immediately. All staff must be directed to avoid entering into the area where the remains were discovered, or altering the area in any way.** (standard) Notification must be made to the Ontario Provincial Police, or local police, who will conduct a site investigation and contact the District Coroner. Notification should also be made to the Registrar, Cemeteries Regulation Unit, CBS, 32 Floor, Eaton Tower, 250 Yonge Street, Toronto, Ontario, M4G 2N5, Telephone: (416) 326-8404. The disposition of the remains will be at the direction of the Registrar.

Where the discovery is not of human remains, but materials, structures or features commonly associated with burials (grave markers or fences, mounds, coffin hardware), all work in the vicinity of the discovery will also be suspended immediately. (standard) Notice in these instances should be made to Registrar, Cemeteries Regulation Unit, CBS and the MCL Archaeologist, MNR cultural heritage specialist and MNR District staff as appropriate. If no human remains are exposed, police contact is not required.

Aboriginal or archaeological values may be associated with human remains or burial sites and operations planned for the vicinity of the discovery should be reviewed relative to these values prior to recommencing operations.

3.6 Compliance

As all archaeological sites are protected under the terms of the *Ontario Heritage Act*, any incursion into areas defined as archaeological site reserves will be subject to the terms and penalties described in the Act.

Where compliance audits of an archaeological high potential AOC shows mineral soils disturbance in excess of 5%, or skid trails over >20% of the AOC, remediation in the form of an MCL Stage 2 assessment will be required. If this assessment shows that damage has been done to an archaeological site then mitigation measures need to be developed with MCL.

If a prescription for an Aboriginal value (or a cultural heritage value also indicated to be an Aboriginal value) is violated during operations then the appropriate Aboriginal community must be contacted to see if damage can be mitigated or repaired.

4.0 FUTURES

Information gathered as a result of new research and from implementation of the Guide will be reviewed in order to evaluate where change may be necessary. This section of the Guide highlights some areas where information relevant to Guide improvement will be sought.

4.1 Aboriginal Values

Recognizing and attempting to resolve issues and clarifying processes described in this Guide will be important, but may also be outside the scope of FMP. Among the more important issues to be addressed are:

- community capacity to participate in values collection;
- community concerns regarding data sensitivity and distribution;
- community concerns over multiple agency values requests;
- cultural awareness of MNR and SFL staff; and
- community understanding of the FMP process.

Improvement to the planning process as it relates to Aboriginal values includes:

- incorporating Aboriginal values and community knowledge into the archaeological high potential modelling process;
- increased opportunity for communities to review and comment on cultural heritage planning data; and
- improved understanding of the sensitivity of Aboriginal values information and developing responsive planning processes and prescriptions.

4.2 Monitoring

Three kinds of monitoring are discussed in this Guide: effects, effectiveness and exceptions monitoring.

Effects monitoring reviews the actual or possible impacts to cultural heritage values resulting from operations. Understanding potential effects allows the effectiveness of a proposed prescription for protecting a value to be determined. While effects monitoring is a responsibility of MNR, an SFL or industry association may initiate and fund effects monitoring studies scoped to include consideration of values protection and additional factors such as fibre supply or sustainability. In a similar manner, MCL, archaeological associations, Aboriginal groups or related agencies may propose, fund and carry out independent effects monitoring projects for factors of interest to them.

Effectiveness monitoring gives information on cultural heritage values protection achieved through the use of this Guide. This review is the responsibility of the planning team, in consultation with the MNR cultural heritage specialist, MCL regional archaeologist and participating Aboriginal groups as appropriate. The review should compile and summarize:

- archaeological assessments commissioned during the plan term;
- other archaeological investigations or inventory surveys in the FMU;
- verification studies completed for Aboriginal or cultural landscapes values;
- reports of site disturbance or accidental discovery during operations;
- new values information provided during the plan term; and
- compliance or exceptions monitoring undertaken.

Effectiveness monitoring includes periodic review of the standards and guidelines in this Guide. Use of this Guide's direction in planning and operations is reported in compliance reports, annual reports prepared by SFLs and audit reports.

Ongoing effectiveness monitoring and literature review, as well as new research, will be used to help improve MNR's understanding of the potential impacts to values caused by various types of operations, as well as the effectiveness of the prescription direction to offer protection from these impacts. For example, at the time this Guide was being prepared, several areas where improved information or approaches to planning and protection were identified, including:

- improving accuracy in modelling of archaeological high potential areas;
- locating archaeological sites not oriented to water;
- Aboriginal involvement and capacity to participate in planning;
- quantify ground disturbance, windfirmness;
- understanding potential impacts from different harvesting systems and site preparation methods especially in relation to natural disturbance; and
- providing training to tree markers to identify cultural heritage sites while carrying out their regular work.

Exceptions monitoring pertains to the practices implemented as part of a prescription for operations which do not follow the direction provided in this Guide. Exceptions monitoring is therefore the responsibility of the SFL.

4.3 Archaeological High Potential Modelling

The archaeological high potential modeling used in developing the archaeological high potential maps will be reviewed on an on-going basis. FIM notes that MNR is responsible for reviewing the results of confirm and verify studies undertaken for archaeological high potential areas. Further, "MNR will evaluate the reliability of the

predictive models which are used to identify candidate high potential areas, using the information collected from both MNR and SFL holders. MNR is responsible for ensuring that predictive models are recalibrated based on these evaluations”.

Some of the critical issues to address include:

- available base data and suitability to use in modeling;
- identify alternate or additional datasets for use in modeling (e.g. areas where Stage 2 assessments have found nothing);
- review calibration methods;
- review confirmation and verification studies;
- archaeological assessment reports; and
- explore methods for improving precision of model output.

4.4 Cultural Heritage Values Inventory

As noted in Section 3.1, a range of data sources are available to cultural heritage planning for forest management planning. As this Guide is implemented it is expected that new data will be added. This may require:

- review and change as necessary, data classes and categories currently defined in NRVIS;
- define potential data sources on the basis of value in cultural heritage planning; and
- add data to NRVIS as available.

Deficiencies in or corrections to MCL data will be communicated to MCL by MNR as they are identified.

4.5 Revisions to the Guide

As required by Condition 38(c) of the *Forest Management Class Environmental Assessment* (EA) approval, Forest Management Guides must be reviewed within 5 years of approval and thereafter at least every five years. This Guide will be reviewed, with any necessary improvements identified in 2010. Interim changes in protection requirements, prescriptions or other direction found in this Guide may also be communicated to planning teams.

APPENDICES

I Archaeological Potential Modelling Overview

Data

The necessary planimetric base features are compiled and error checked to ensure that they are sufficient in detail and accuracy for modelling purposes. This includes securing the most accurate and detailed version of the geospatial datasets available for the FMU and confirming values accuracy, for example ensuring that stream flow and order is correct for streams that flow into the FMU from an adjacent unit. The presence of certain landscape features in the data, such as bays and islands, should be confirmed through review of appropriate scale topographic maps. Review also includes examining larger lakes to ensure that they are represented as a single polygon and correcting if not. The planning FRI, should also be considered as this will provide detailed information on forest cover, soil and ecosite types and areas of non-productive forest. Data compilation also includes error checking the distribution of the registered and reported archaeological site data points to ensure accurate location.

Configuring the data

The data should be reviewed at the outset to determine the most appropriate resolution at which to operate the model and the default, inferred or known size of archaeological sites provided as points and intended for use in calibration. While geospatial data is available at varying resolutions, representing all archaeological sites as single grid cells may result in false precision or over-ascription of high potential in the preliminary output.

Prior to calibration, information is extracted on the frequency of landscape elements described in the geospatial data across the Unit (i.e. frequency of soils by texture). This frequency data is used in testing the association between registered sites in the study area and the referent landscape. Once the frequency data is obtained, the association between registered site areas and specific landscape elements is tested statistically and used in calibrating the model.

In management units with few archaeological sites or where locational accuracy is questioned, replacement or additional site data may be extrapolated using site information from adjacent management units of similar landscape character. Additional calibration support may come from cultural landscape information assembled for planning. Sites of special value in planning and those which are understood to reflect a distinct relationship to the landscape (i.e. pictographs, railways), should also be distinguished in this data prior to use in calibration, or separated for use in calibrating a distinct model operation.

Calibration

Calibration of the model is based on the strength of association between characteristics of the referent landscape and the registered sites. The calibrated model will apply a weighting to each data layer which reflects the inferred contribution of this factor to the habitability of a location. Within layers, values are ascribed to specific landscape units to reflect the particular importance of that characteristic to habitability. With this weighting, the quaternary geology may be weighted 3, with abandoned beach units valued 10 (total 30) and end moraine units valued 7 (total 21). Other landscape units within the layer, for example ground moraines, could be valued 1, or 0 to reflect their ubiquitous nature and lack of clear site associations.

Calibration also considers the manner in which the outcomes are combined. In the weighted intersect modelling described, weights and values are calculated for each data layer and combined to provide final “scores” for each grid cell across of the landscape. Combinations can limit or enhance the influence certain variables hold over the final output. For example, proximity to streams may be enhanced by adding the weighted values derived from separate operations, or diminished by using only the highest weighted value for water among those calculated.

Setting archeological high potential

The final scores for each grid cell in the preliminary output reflect the full range of potential for the Unit. Archeological high potential properly includes only those values that lie above a determined threshold. The archeological high potential cutoff score is determined through comparison of the distribution of scores for the referent landscape to the scores for registered sites. A successful modeling application will result in a good separation of scores for the registered sites from scores across the referent landscape. Registered site frequency and distribution within a Unit will affect the confidence that can be placed on the established threshold. Units with a large number of evenly distributed sites will support a high confidence level; modeling output calibrated using only a few sites or tightly clustered sites will not.

The basic criteria for assessing modeling success are that:

- scores for sites are clustered, as are scores for the underlying landscape; and
- these clustered scores are widely separated from each other.

Isolating those parts of the landscape that should be considered archeological high potential requires that a cut off point for the weighted values is set. Usually, the cut off is set to coincide with the lowest score achieved by a registered site matching the sites being described by the model calibration. Once a high potential cut off score is set, a preliminary map of potential is available for use in developing the final cultural heritage values map.

Confirming Archaeological High Potential

MNR is responsible for confirming the output from predictive models, which includes archaeological high potential output portrayed on the preliminary maps. Confirming these values involves the following:

1. Modelling results are not treated as known values until the MNR cultural heritage specialist has conducted *further investigation or analysis*. This is achieved by re-examining the model assumptions, the resulting output and refining HPCH areas requiring protection. This may involve a manual cleanup of the map and/or multiple runs of the model and results in the production of a second map showing HPCH areas which will be forwarded to the District.
2. As appropriate, the planning team will review this map to identify areas where local knowledge may provide additional information. Planning teams can review the second map to identify where high potential areas could be further reduced, including their rationale and supporting information (i.e. updated FRI showing alder). Further detail is contained in "*MNR Confirmation of High Potential Cultural Heritage (HPCH) Values Identified with the Heritage Assessment Tool (H.A.T.) predictive model*" (Interpretation note, November 2004).
3. The final archaeological high potential map will be produced once planning teams have had the opportunity to review the high potential map and where the MNR cultural heritage specialist concurs with the proposed changes to the areas of high potential. Normally, the review period is 30-days from receipt of the initial map. If the archaeological high potential values are accepted as mapped, the initial map will constitute the final values map. The final archaeological high potential values will be the areas to be used for AOC planning.

The intention of the 3-step confirmation process is to ensure that areas identified as high potential match the assumptions of modelling defined in the calibration of final modelling run. These assumptions address landscape values not archaeological sites. The process of MNR confirmation of HPCH values is concluded when these steps have been completed.

II Integration with Forest Management Planning

Cultural heritage planning for forest management activities is closely intertwined with the planning process. This section is intended to help planning teams understand at what stages of the planning process steps need to be taken in order to fulfill the intent of this guide and who needs to be involved. The *Forest Management Planning Manual for Ontario's Crown Forests* (June 2004) should be the primary document used when preparing a forest management plan.

Planning Schedule

The following is an overview of the planning stages for the two phases of the 10 year forest management plan. The remainder of this appendix discusses each of these stages in more detail with regards to cultural heritage.

The table is a comprehensive source of information, but not all items are discussed in the text of this Guide as marked with a *.

Planning Stage per the FMPM	Item to be completed to fulfill cultural heritage planning obligations
Phase One	
Stage 1: Organizing for Planning	<ul style="list-style-type: none"> • cultural heritage reviewers and advisors are contacted; • send completed planning inventory and locally known cultural heritage sites to provincial cultural heritage specialist; • provincial cultural heritage specialist ensures archaeological high potential area modelling is completed and sent to planning teams; • Ministry of Culture is contacted for registered archaeological sites data; • MNR values database is assessed for gaps or poor information; steps required to correct these gaps identified; and • Aboriginal communities are contacted to discuss participation in updating Aboriginal Background Information Reports, including the values maps.

Stage 2: Proposed Long-Term Management Direction	<ul style="list-style-type: none"> • draft Aboriginal Background Information Report(s) prepared, including values maps; and • expected amount of forest in reserves due to cultural heritage values protection is reflected in wood supply modelling*.
Stage 3: Planning of Proposed Operations	<ul style="list-style-type: none"> • area of concern prescriptions are created; • final Aboriginal Background Information Report(s) prepared, including maps*; and • draft Report on Protection of Identified Aboriginal Values is written*.
Stage 4: Preparation, Submission and Review of Draft FMP	<ul style="list-style-type: none"> • final Report on Protection of Identified Aboriginal Values is written*; and • draft plan is reviewed ensuring cultural heritage values are properly identified and protection requirements addressed.
Stage 5: Revision and Approval of the FMP	<ul style="list-style-type: none"> • ensure required alterations regarding cultural heritage have been completed prior to plan approval.
Phase Two	
Stage One: Planning of Proposed Operations	<ul style="list-style-type: none"> • discuss with provincial cultural heritage specialist whether appropriate to rerun model to determine archaeological high potential areas. Do so if needed; • make plan reviewers and advisors aware of preparation for second five year period of the forest management plan; • check values maps that updates have been included*; and • Ministry of Culture is contacted for registered archaeological site data.
Stage Two: Preparation, Submission and Review of the Draft Planned Operations	<ul style="list-style-type: none"> • ensure existing prescriptions are still appropriate. Change as required; • create prescriptions for any new value types*; and • draft plan is reviewed ensuring cultural heritage values are properly identified and protection requirements addressed.
Stage Three: Revision and Approval of Planned Operations	<ul style="list-style-type: none"> • ensure required alterations regarding cultural heritage have been completed prior to plan approval.

Plan Implementation	
General	<ul style="list-style-type: none">• ensure that prescriptions requiring decisions at the annual work schedule stage (i.e. following verification studies) are complete prior to forest management activities in indicated area;• ensure that all amendments consider possible effects on known cultural heritage values; and• compliance and effectiveness monitoring and associated reporting.

* These items are not discussed in any greater detail in this section. The Forest Management Planning Manual for Ontario's Crown Forests (June 2004) should be consulted for a more detailed explanation.

FMPM Phase I - Stage 1 - Organizing for Planning

Step 1: Notification

Data providers and others who may be asked to provide background information or planning support, as well as plan reviewers or advisors need to be aware when planning will commence. The District Manager should provide notice prior to the start of planning. At a minimum the following staff need to be contacted:

- MNR cultural heritage specialist;
- MCL Regional Archaeologist; and
- MCL Data Coordinator.

Step 2: Update of Cultural Heritage Information

MNR district and head office staff assemble available values data and the planning team reviews it for accuracy, sensitivity and the need for special consideration in planning. This data is the basis for areas of concern portrayed on the operations maps. The data on these maps comes from several sources which the following describes in more detail.

A) Aboriginal Values The appropriate planning team member will request to review the Aboriginal Values map(s) and the Native or Aboriginal Background Information Report with members of the participating Aboriginal, including:

- review history of data collection, methods and products;
- identify sensitive data, or data of special value to planning; and
- identify data gaps and possible effects of these gaps on planning.

This will help identify where effort can be made in the preparation of the draft and final Aboriginal Background Information Reports for the new forest management plan.

B) Cultural landscape data will be compiled from available sources at the MNR District. When doing this historic data sources should be reviewed in order to:

- identify and map key historical themes in the FMU;
- identify and map any available cultural landscape source data; and
- identify data gaps and possible effect on planning.

If a review of this data identifies data concerns, such as gaps or “fuzzy” locations, the planning team should determine how these concerns will be addressed in the plan. The MNR provincial cultural heritage specialist will incorporate this data as appropriate into the archaeological high potential modelling for the Unit.

C) Once the planning inventory has been deemed complete and accurate a digital copy should be forwarded to the MNR cultural heritage specialist for use in archaeological high potential modelling. If further studies have been done on archaeological high potential areas in the current plan then the results of these should also be made available to help in the calibration of the new model.

D) Registered archaeological sites data will be requested from the MCL Data Coordinator. This data will be assembled and reviewed prior to use in archaeological high potential modelling. This review will include:

- evaluation of location accuracy of registered sites data;
- identification of sensitive data or data of special value to planning; and
- identification of- data gaps and possible effect on planning.

Data that is known to exist, but has not been received and data that was insufficient for planning due to outstanding issues concerning data accuracy or attributes should be identified to the planning team.

Output from the modelling and other applicable datasets will be transferred to the planning team to form part of the background information available during the FMP process. Confirming and verifying the values may commence at this point in planning, as discussed in Sections 4.1 and 4.2.

Values maps will be updated throughout the planning process and plan period as more information becomes available

FMPM Phase 1 - Stage 2 – Proposed Long-Term Management Direction

Step 3: Draft Aboriginal Background Information Report(s)

At the end of this stage there will be a draft Aboriginal Background Information Report with a values map available for each participating Aboriginal community. It is advisable to have a data loan or sharing agreement in place at this point. This agreement will direct how values data contained in the reports and maps should be treated in planning.

FMPM Phase 1 - Stage 3 – Planning of Proposed Operations

Step 4: Operational Planning

Areas of concern prescriptions will be developed in accordance to the terms of this Guide for the areas selected for operations. As part of the prescription development, the planning team should determine how sensitive information will be treated, including how this data will be portrayed on planning or operations maps and in prescription listings.

The MNR planning team member responsible for working with Aboriginal communities will assist the planning team in ensuring that a process for prescriptions development and review has been established and agreed to by the planning team and participating Aboriginal groups. This process should be applied to all groups that provided values information or indicated to the planning team that values information for the plan area is known to them.

FMPM Phase 1 - Stage 4 – Preparation, Submission and Review of Draft Forest Management Plan

Step 5: Draft Plan Review

Notice that the Draft FMP has been submitted to MNR for review and comment should be circulated to those listed in Step 1. These individuals should identify to the MNR contact which sections of the draft plan, if any, they wish to review. The normal review process will be followed.

FMPM Phase 1 - Stage 5 – Revision and Approval of the FM Plan

Step 6: Final Plan Review

Notice that the Final FMP has been submitted should be circulated to those listed in Step 1. These individuals should identify to the MNR contact which sections of the draft plan, if any, they wish to review. The final plan review will ensure that items in the required list of alterations identified during the draft plan review have been addressed.

FMPM Phase 2 - Stage 1 – Planning of Proposed Operations

Step 7: Archaeological High Potential Modelling

Any additional modelling required for the archaeological high potential areas should be completed prior to refining any proposed areas of concern within harvest blocks. All additional modelling should be completed as directed by the MNR cultural heritage specialist.

Step 8: Notification

Notification that preparation of the second five year period of the forest management plan should include those listed in Step 1, plus any other individuals that were identified by the planning team as having relevant data or a particular interest in cultural heritage protection. This notification should also include a request to MCL for any additional archaeological site information reported in the preceding five years.

FMPM Phase 2 - Stage 2 – Preparation, Submission and Review of the Draft Planned Operations

Step 9: Area of Concern Prescriptions

Existing cultural heritage values prescriptions should be reviewed to ensure they are still appropriate, or if prescriptions for other categories of value should be added.

Step 10: Draft Plan Review

Notice that the Draft FMP has been submitted to MNR for review and comment should be circulated to those listed in Step 1. These individuals should identify to the MNR contact which sections of the draft plan, if any, they wish to review. The normal review process will be followed.

FMPM Phase 2 - Stage 3 – Revision and Approval of Planned Operations

Step 11: Final Plan Review

Notice that the Final FMP has been submitted should be circulated to those listed in Step 1. These individuals should identify to the MNR contact which sections of the draft plan, if any, they wish to review. The final plan will be reviewed to ensure that items in the required list of alterations identified during the draft plan review have been addressed.

Plan Implementation

Verification Studies

Upon approval of the plan and commencement of operations, verification studies or additional consultation that is undertaken must be conducted in accordance with the appropriate operational prescription. Verification studies can be conducted at any time during the plan term without requiring a plan amendment. Completed verification studies generate additional values information and support values protection. New information arising from these studies support ongoing improvement to the cultural heritage values planning process.

Amendments

When plan amendments are proposed, MNR must consider whether they may affect any cultural heritage values; therefore a review of the existing values databases should be conducted. While in most cases existing cultural heritage prescriptions will apply, the need for additional or altered prescriptions might be identified.

New values may be identified at any time during the plan period. Where new values are identified and confirmed, protection may be achieved under an existing prescription. Similarly, where a value is listed in the plan, but upon completion of a field review or verification study, it is determined that the value as described does not exist at a location, the values and associated protection area can be removed. If a prescription does not exist in the plan for a value that is identified during the plan period, a new prescription will be required and the plan amended.

Effectiveness Monitoring

As discussed in Section 5.2 effectiveness monitoring is critical to understanding whether the guide works and for creating a better guide in the future.

Roles and Responsibilities

The protection and stewardship of Ontario's cultural heritage values is a provincial responsibility. In the FMP, the responsibility for ensuring that the provincial interest is addressed in planning and in operations is distributed among a number of agencies. Understanding the roles and responsibilities for cultural heritage protection can ensure that values are protected, the provincial interest is addressed and that forest management planning and operations proceeds smoothly.

Agency/staff position/planning team member	Area of responsibility
Ministry of Culture	
Data Coordinator	<ul style="list-style-type: none"> • provide registered site data for archaeological high potential modelling; • provide registered site data for AOC planning; and • data and support for cultural landscape maps.
Regional Archaeologist	<ul style="list-style-type: none"> • support review of archaeological high potential modelling, cultural landscape maps and prescriptions; • support identification of data sources, gaps, future data needs; and • review of verification study reports.
Ministry of Natural Resources	
Cultural Heritage Specialist	<ul style="list-style-type: none"> • archaeological high potential modelling; • direction to planning teams on confirming and verifying values; • FMP Training on operational planning for cultural heritage values; and • support with cultural heritage prescriptions.
MNR planning team member assigned the role of Aboriginal liaison	<ul style="list-style-type: none"> • facilitate Aboriginal participation in planning; • coordinate Aboriginal Values Background Report and associated Values mapping; and • identification of issues relating to operational prescriptions and discussion with participating Aboriginal communities.
Other	

Plan Author with Planning Team	<ul style="list-style-type: none">• develop appropriate AOC prescriptions;• discussion protection strategies and prescriptions with participating Aboriginal communities;• field verification of values; and• ensure protection of sensitive information as agreed with provider.
LCC (heritage member)	<ul style="list-style-type: none">• aid in the identification and collection of cultural heritage information.
Aboriginal Planning Team Members(s)	<ul style="list-style-type: none">• assist in identification and collection of Aboriginal values, as appropriate; and• support to values location and mapping and in determining prescriptions.

III Example FMP Tables

These example tables are for illustration purposes only. Section 3 must be read in order to understand the standards and guidelines that must be adhered to for each prescription type.

MANAGEMENT UNIT NAME: **Hopewell Forest**
PLAN PERIOD: **2007 TO 2012**

Phase I (Year 1-5)
 Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
RS1702	Registered Archaeological Site (non- Aboriginal Value)	Group	200m reserve from site centre. Marking of the reserve boundaries must not draw attention to the value.		Forest Management Guide for Cultural Heritage Values (2005)			yes^	yes^

Location of these values are not included on values maps and operations maps in the FMP. Locations will be available for tree markers and logging supervisors so that they may identify the AOC boundary on the ground.

^ FMP 23 would then state in the appropriate columns: "No new roads, landings, water crossing or other vehicle traffic."

MANAGEMENT UNIT NAME: **Hopewell Forest**
PLAN PERIOD: **2007 TO 2012**

Phase I (Year 1-5)
 Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
RA5678	Registered Archeological Site and Aboriginal Value	Individual	25m reserve from established boundary of the site. No new roads, landings, water crossing or other vehicle traffic. Marking of the reserve boundaries must not draw attention to the value. Any amendment to the prescription will first be discussed with Spiritual Lake Aboriginal community. Spiritual Lake Aboriginal community will be contacted to help mark the reserve.		Forest Management Guide for Cultural Heritage Values (2005) and discussion with Spiritual Lake Aboriginal Community (see supp doc form).			yes^	yes^

Location of these values are not included on values maps and operations maps in the FMP. Locations will be available for tree markers and logging supervisors so that they may identify the AOC boundary on the ground.

^ FMP 23 would state in the appropriate column: "No new roads, landings, water crossing or other vehicle traffic."

MANAGEMENT UNIT NAME: **Hopewell Forest**
PLAN PERIOD: **2007 TO 2012**

Phase I (Year 1-5)
 Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
HP0804	High Potential Archaeological Area	Group	<p>Normal operations can be undertaken where the proposed operations will not cause soil disturbance in excess of the levels of approved trial results or the levels described below:</p> <ul style="list-style-type: none"> √ winter harvest on frozen ground* √ summer harvest if mineral soil disturbance is anticipated to be less than 5% √ skid trail exposure should be less than 5% √ skid trail area can't be more than 20% of the total AOC area √ mineral soil disturbance from mechanical site preparation to be no more than natural levels √ okay to do: natural regeneration, hand planting, chemical site prep, manual tending, chemical tending, and seeding √ See map for various widths and lengths of AOCs <p>OR if a Stage 2 MCL archaeological assessment of the area does not find any artifacts.</p>		Forest Management Guide for Cultural Heritage Values (2005)			Yes^ AOC #'s:....	

*frozen ground means frozen more than 20 cm

FMP 23 would state in appropriate columns: "if specific requirements are met as outlined below or if a Stage 2 MCL archaeological assessment of the area does not find any artifacts. no new primary or branch roads or water crossings except winter roads and landings constructed over packed snow when ground is frozen* and mineral soil exposure is less than 5% or water crossings constructed using snow, ice, or a temporary bridge which does not require additional grubbing, filling, or ditching, and is only used when the ground is frozen* and mineral soil exposure is less than 5% or water crossings using temporary bridges only with no in-ground footings (in winter approaches must be constructed using packed snow on frozen ground or in other seasons approaches re constructed using less than 2 metres of fill that is placed over geotextile, corduroy or brush mats with no grubbing or ditching. Can use and maintain existing roads.

MANAGEMENT UNIT NAME: **Hopewell Forest**
PLAN PERIOD: **2007 TO 2012**

Phase I (Year 1-5)
Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
AV5791	Aboriginal Value	Group	Variable reserve area as identified on MNR map. Any amendment must be discussed with Spiritual Aboriginal community first. Spriritual Aboriginal community must be invited to participate in the boundary marking. Marking of the reserve boundaries must not draw attention to the value.		Discussion with Spiritual Lake Aboriginal Community (see supp. doc form) and Forest Management Guide for Cultural Heritage Values (2005)				Yes^

Location of these values are not included on values maps and operations maps in the FMP. Locations will be available for tree markers and logging supervisors so that they may identify the AOC boundary on the ground.

^ FMP 23 would state in the appopriate column: "No roads or landings."

MANAGEMENT UNIT NAME: **Hopewell Forest**
 PLAN PERIOD: **2007 TO 2012**

Phase I (Year 1-5)
 Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
CL2468	Cultural Landscape with landscape level features	individual	10 m reserve around relict machinery and foundation of buildings; No operations between adjacent foundations; ensure harvesting done so that trees, branches etc. don't fall on known artifacts. No site prep or mechanical tending equipment between adjacent foundations. Marking of the reserve boundaries must not draw attention to the value. See operations map for specifics.		Forest Management Guide for Cultural Heritage Values (2005) and Dunn Historical Committee (see supp doc form).				Yes^

^ FMP- 23 would state in appropriate column "Only operational roads allowed through site and cannot pass between adjacent foundations."

MANAGEMENT UNIT NAME: **Hopewell Forest**
 PLAN PERIOD: **2007 TO 2012**

Phase I (Year 1-5)
 Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
AG1357	General Area identified with Aboriginal values	individual	At least six months prior to expected harvest, Spiritual Lake Aboriginal community will be contacted to visit the site and identify the specific areas to be protected and to discuss the necessary protection measures for those areas. These protection measures will be amended to the plan. Marking of the reserve boundaries must not draw attention to the value.		Discussion with Spiritual Lake Aboriginal community (see supp doc form) and Forest Management Guide for Cultural Heritage Values (2005)				Yes

MANAGEMENT UNIT NAME: **Hopewell Forest**
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Phase I (Year 1-5)
Phase II (Year 6-10)

FMP-14 OPERATIONAL PRESCRIPTIONS FOR AREAS OF CONCERN

AOC or AOC Group Identifier	Description of Natural Resource Feature, Land Use or Value	Individual or Group AOC	Operational Prescription	SGR Code	Source	Exception	Objection	Roads	
								Primary or Branch Road Crossing	Conditions on Operational Roads
CL2468	Cultural Landscape with cemetery and viewscape values	individual	Reserve within 20m of historic cemetery. Selection harvest only between historic cemetery and river (width marked on operations map). Must leave at least 16 m ² /ha BA. Marking of the reserve boundaries must not draw attention to the value.		Forest Management Guide for Cultural Heritage Values (2005) and Dunn Historical Society (see supp doc form)				yes^

^ FMP 23 would state in the appropriate column: "No roads within viewscape area."

IV Requirements for Archaeological Assessment Reports

This appendix is provided as background for those who are intending to follow a MCL Stage 2 assessment. These reporting requirements are MCL's and are assessed by them. MNR is not involved.

Copies of the report

- At a minimum five copies of the report in excess of those required by the SFL and consultant are required. Three copies are sent to MCL for review, licence and archival purposes. One copy must be sent to the cultural heritage specialist and one copy to the MNR Area forester responsible for the plan area. A copy of the report should also be submitted to any Aboriginal community who has an interest in the site.

Report format

To facilitate review, a short summary of the report should be prepared, including:

- a statement of the purpose of the assessment which references this Guide, the prescription as contained in the FMP, the Overview Report and the proposed operations at the AOC;
- FMP and consultant identification information;
- specific mention of assessment conducted in or near registered sites;
- a summary of the field work conducted, including reference to the results of the project (i.e. no finds, site identification and localized areas of low archaeological potential);
- recommendations made in the report as a result of the field work;
- the report must **identify the FMP** by:
 - management unit name and number;
 - plan year, plan term and plan author; and
 - SFL holder (plan holder), plus a contact name within the SFL.

The report must identify the archaeologist, including:

- the consultant's name, contact information archaeological licence number and CIF/PIF number; and
- the report should also list the dates of field work, names of field crew and name and licence information for any individual who completed the field work on behalf of the consultant.

The **location and purpose** of the assessment must be stated, including:

- AOC number and associated stand number (with page/map reference to FMP);
- AOC type (i.e. values class, category);
- proposed operations in the AOC (i.e. water crossing, summer harvest, site preparation);
- anticipated impact to each AOC being assessed, relative to cultural heritage values that may be present;
- a copy of the FMP-17 table listing the prescription for the AOC should be attached to the report; and
- **Note:** Assessments undertaken at or near registered sites should be clearly indicated and distinguished from assessments of archaeological high potential areas.

A description of the physical site should be provided, indicating:

- vegetation: species composition from FRI, indication of non-productive forest;
- ecosite;
- ground cover, including note on ground surface visibility;
- weather conditions during field work;
- topography within the AOC;
- estimates of ground strength and roughness;
- description of any shoreline, including elevation above water (if AOC oriented to water); and
- recent natural and cultural disturbances, including year of last depletion.

The report should also contain:

- a summary of the information on which the AOC was based;
- a review of information collected by the consultant that was not available in the initial description of the value;
- a description of the study area and methodology, including:
 - size of the AOC and area reviewed in assessment;
 - local areas of low archaeological potential within the AOC, with reference to an operational scale map on which these have been delineated;
 - characteristics of the local areas of low archaeological potential, with comments, including operational constraints and presence or absence of merchantable timber;
 - list of test pits excavated within the AOC, with reference to an operational scale map and referencing system. (In very large areas, or where the survey was directed towards only the verification of specific features within the AOC, this list may be substituted by a descriptive summary and map.);
 - any deviations from minimum standards and reasons;

- list of positive test pits, with reference to an operational scale map on which these have been delineated; and
- list and description of other cultural heritage features located during the field assessment with reference to an operational scale map on which these have been delineated.

The **summary of the results** should include:

- a clear statement that no cultural heritage materials or features were identified, if this is the case;
- for **archaeological sites** identified, include:
 - site registration (Borden) number, if applicable;
 - description of intensified testing, or other methods used to define site limits; and
 - description of mitigation strategy, including methods used to lay out protection reserve.
- for other cultural heritage values discovered, include:
 - reference to appropriate AOC prescription; and
 - reference to any required consultation relative to the value.
- for each site or value identified, include:
 - a brief descriptive summary with a catalogue of artifacts recovered and a series of photographic views. This may be augmented by the appropriate aerial photo for the site. It is expected a limited number of views will be used where surface features are not visible.
 - evaluation of site significance;
 - sketch plans of sites identified, including location of permanent datum(s); and
 - any other relevant information regarding the site.
- **graphics** required for the assessment report include:
 - provincial map highlighting the FMU;
 - FMU map showing general location of field work;
 - operational scale map showing AOC and Stand boundaries;
 - operational scale map showing location of test pits, local areas of low archaeological potential or pre-existing disturbance and location of finds; and
 - site plans and photographic views as described for each site identified.
- **recommendations**, including:
 - reference to the prescription in the FMP;
 - mitigation strategy for cultural heritage values identified;
 - long and short term duration of artifacts recovered; and
 - the standard conditions concerning accidental discovery and human remains.

The report should be signed and dated by the archaeology consultant.

GLOSSARY OF TERMS

Aboriginal Value – For the purpose of this guide, Aboriginal values are those which have a geographic component and which can be primarily described as holding cultural heritage significance to the Aboriginal community regardless of whether there are physical remains. Non-spatial values, economic and social interests and concerns which may be described as Aboriginal and Treaty Rights may be considered in forest management planning, but are outside of the scope of this Guide.

Adverse Effects - as defined by the *Environmental Protection Act*, includes:

- impairment of the quality of the natural environment for any use that can be made of it;
- injury or damage to property or plant and animal life;
- loss of enjoyment of normal use of property.

Alteration – In the sense of the Ontario Heritage Act an alteration is a change to an archaeological site in any manner such as to restore, renovate, repair or disturb. For the purpose of this guide, disturbance of an archaeological site is the key thing to mitigate.

Archaeology – The study of humans by examining and interpreting the physical objects of the everyday lives of people in the past. (AITCM)

Archaeologist – A scientist professionally trained to study the human pattern through the study of past material culture. (AITCM)

Archaeological Assessment – A qualified individual using the process described in the current MCL *Standards and Guidelines for Consultant Archaeologists*.

Archaeological High Potential Areas - Areas with the likelihood to contain archaeological resources. Criteria for determining archaeological potential are established by the province. Archaeological potential is confirmed through a prescribed process, such as described in the *Forest Information Manual*. It is verified through archaeological fieldwork undertaken in accordance with the *Ontario Heritage Act*.

Archaeological Resources - Includes artifacts, archaeological sites and marine archaeological sites. The identification and evaluation of such resources are based on archaeological fieldwork undertaken in accordance with the *Ontario Heritage Act*.

Archaeological Site – A place that has physical evidence of past human activity which can be investigated using archaeological techniques. (AITCM)

Artifact - An object or product of cultural significance that has been modified by human activity or use, and that differs from a similar object produced without human input; e.g.

a stone tool. They are typically considered to be portable items, though they could also be boulders or rock faces. (AITCM)

Built Heritage Resources - One or more significant buildings, structures, monuments, installations, or remains associated with architectural, cultural, social, political, economic, or military history and identified as being important to a community. These resources may be identified through designation under the *Ontario Heritage Act*, or listed by local, provincial or federal jurisdictions.

Burial – Any structured or unstructured resting place where human remains are found. (AITCM)

Confirm – The process that the data provider does (e.g. MNR) to ensure that value's information meets the minimum standards of FIM in order to be considered as a value.

Conserved - The identification, protection, use and management of cultural heritage and archaeological resources in a responsible manner. This may be addressed through a heritage impact assessment.

Cultural Landscape - A defined geographical area of heritage significance which has been modified by human activities and is valued by a community. It involves grouping(s) of individual heritage features such as structures, spaces, archaeological sites and natural elements, which together form a significant type of heritage form, distinctive of that of its constituent elements or parts. Examples may include heritage conservation districts designated under the *Ontario Heritage Act*, a heritage village, historic parks, gardens, battlefields, heritage main streets and neighbourhoods and cemeteries.

Designated Heritage Properties - Real property designated under Parts IV, V or VI of the *Ontario Heritage Act*.

Ecological Functions - The natural processes, products or services that living and non-living environments provide or perform within or between species, ecosystems and landscapes. These may include biological, physical and socio-economic interactions.

Heritage Attributes - The principle features, characteristics and appearance of designated heritage properties that contribute to its cultural heritage significance.

Licensed Archaeologist – As described in section 48 of the Ontario Heritage Act ; briefly: a person MCL licences to do specific archaeological work as outlined in their licence proposal to MCL and the results are reported back to MCL at the end of the project for review and approval.

Mitigate, mitigation – Actions taken during the planning and operation on forest harvest areas to alleviate potential adverse effects.

Petroform - An arrangement of rocks made by humans. (AITCM)

Petroglyph – Symbols or designs pecked, carved, or incised on rock surfaces. (AITCM)

Pictograph- Symbols or designs painted on rock surfaces. (AITCM)

Precautionary principle In the absence of conclusive information to confirm or verify the presence or features of a value, this principle requires the consideration of the value in the planning of road locations and area of concern prescription in order to ensure that the value is protected, based on the high probability of its presence and the potential that it may be affected by forest management operations in a significant and negative way. (FIM 2001)

Pre contact sites – An archaeological site left from the Aboriginal people prior to European exploration of the area.

Professional judgment – Advice based on the education, training, and experience that individual has in their area of competency.

Qualified individual – For the purpose of this guide a qualified individual is dependent on the type of value. For those values that Ministry of Culture has control (i.e. archaeological sites and archaeological high potential areas) a qualified individual is a licensed archaeologist through the Ontario Heritage Act. For cultural landscape values a qualified individual may be a person who has knowledge and experience with specific ones. A qualified individual for Aboriginal values may be an elder or another individual who the community identifies as the person best provide information and guidance on their values.

Post contact – The exact time period differs depending on when European exploration reached a certain part of the province.

Registered site- A site containing artifacts that is in the MCL database with a Borden (site locator) number. MCL refers to these sites as being 'verified'.

Sacred Site – A place of religious or spiritual value for Aboriginal communities. May or may not have archaeological deposits. (AITCM)

Unregistered sites – A known site containing artifacts that is not part of the official MCL database. The Ministry of Culture uses the term *unverified* to mean the same thing.

Verify – Something that the data provider does (e.g. SFL for high potential areas) to ensure that the data has been confirmed and the information is accurate. It doesn't need to be done if the SFL holder accepts the AOC as provided by the MNR and plan to apply the appropriate AOC prescriptions.

Sources Used:

AITCM – Archaeological Inventory Training for Crew Members - Workbook
FIM - Forest Information Manual, 2001